



# Australian Bureau of Statistics

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### STADIUM AUSTRALIA

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A record breaking 4.5 billion people around the world are expected to tune in to the Opening Ceremony of the 2000 Games in Sydney. The Sydney Olympics have provided many opportunities, not least to develop one of the most exciting sporting and entertainment venues in the world - Stadium Australia.

The stadium has already drawn record crowds to major football events. Australians' love of sport will ensure that Stadium Australia continues to be the fixture for major sporting, cultural and entertainment events well into the next millennium.

### SOME FIRSTS

Stadium Australia features a number of 'firsts' in its facilities:

- With 110,000 seats, Stadium Australia is the largest Olympic stadium in the world. The previous record was held by Los Angeles with 101,000 seats.
- Video screens and scoreboards have been installed at a cost of \$10m. The two video screens are the largest ever constructed for the Olympic Games. Equal to 440 standard television sets and four storeys high, they display more than one million colours.
- For the first time in modern Olympic history, all of the athletes will be living in the Olympic village surrounding the stadium.
- Since March 1999, the stadium has hosted world record crowds for both Rugby League and Rugby Union events. The League 'Double Header', an ambitious project for a new stadium, was attended by 104,000 people just three days after its completion.

### World-class design

The stadium's design makes it one of the largest, most advanced, comfortable and versatile stadia in the world.

Beside its natural beauty, the building is also functional. The pitch of the roof helps focus attention onto the field, enhancing atmosphere within the stadium. The roof affords effective weather protection and good acoustics, while allowing maximum sunlight to reach the playing surface all day.

Designs for the stadium were inspired by the curves of an Australian slouch hat and adapted for the Australian environment.

## **Track and turf**

Stadium Australia chose the Mondo Sportflex Super X track surface. This solid rubber surface provides a honeycomb structure with one air pocket per square centimetre and millions of individual shock absorbers directly under the running surface.

Penetrating spikes are unnecessary, and new generations of cone and pyramid shaped spikes have been designed to deflect the running surface rather than penetrate it. Body impact is reduced as athletes' feet do not make full contact with the ground. Some 120 world records have been set on Mondo Sportflex Super X since its development.

The reinforced sand/mesh element base of the StrathAyr Turf System provides a safe and consistent surface where there is little variation in wet or dry conditions. The surface caters for extreme levels of use; in conjunction with the use of modules over the running track this allows the field to be used for play immediately after repair. The modules have enabled the stadium to be used already for various football codes.

## **Catering for future uses**

Although Stadium Australia was purpose-built for the Olympics, its designers have made provision for its future uses, with technology like 'smart seats' incorporated into the design.

From 2001, the stadium will be able to be quickly reconfigured from rectangular to oval shape and vice versa. Once the athletics track is no longer needed, it will be taken out and replaced with flexible seating. This seating (the bottom two sections of the east and west bowl) can be moved hydraulically 15.6 metres forward or backward to form a rectangular playing surface for Rugby League, Rugby Union or Soccer, or an oval for Australian Rules and Cricket.

The retractable seating system can increase the size and change the shape of the playing surface at just eight hours' notice. The stadium could host a Rugby League game on a Saturday and an Australian Rules game on a Sunday.

The north and south ends of the lower bowl will be roofed following the Olympic Games, and provision has been made in the design to accommodate a retractable roof in the future. The low front edge effectively shades and protects spectators, and minimises shadows and patching of direct sunlight onto the playing area. No matter what time of day, lighting conditions will be at their best.

## **The 'green' stadium**

Stadium Australia has invested in alternative energy sources like solar, wind, hydro and biomass instead of traditional fossil fuels.

As a participant in a 'Green Energy' initiative by Energy Australia, Stadium Australia is the largest single site using green energy in the country. It is estimated that this initiative will prevent the release of more than 13 million tonnes of greenhouse gas into the atmosphere every year.

A responsible attitude to ecologically sustainable development informed the design of the Stadium. For example, when the original residents - a 300 strong colony of green and golden bell frogs - were discovered, development plans were modified to accommodate them.

Other initiatives include:

- life cycle assessments of all building materials to determine their environmental impact;

- minimal use of PVC;
- integration of passive ventilation to minimise the amount of air conditioning required and to save energy;
- a reduced need for artificial lighting, with maximised intake of daylight;
- collection of rainwater for irrigation of the pitch. Other water saving devices minimise the need for potable water. Extra heat created by generators is used to heat water for the stadium;
- environment-friendly, gas fired co-generators for backup to the main supply of electricity maximise the use of renewable energy sources; and
- stored solar energy will light Olympic Boulevard for six hours every night. The large crane-like structures over the walkways outside the entrance to the stadium are solar powered lights.

## **Building the stadium**

Construction of Stadium Australia started in September 1996 and finished in March 1999. Development to date has cost over \$650m. A massive cut and fill earthworks operation levelled the site, moving 55,000 cubic metres of soil with over 50,000 trucks. Materials used during construction included:

- five drilling rigs to construct 1,800 foundation piles;
- some 18,000 concrete trucks to deliver concrete;
- over 180 km of electrical cabling; and
- a million masonry blocks. Laid end to end, the blocks would stretch for 400 km.

Some 900 construction workers were on-site when work was at its peak.

## **Stadium Australia - some facts and figures**

The foundation stone, donated by the Greek Ministry of Culture to honour the last Games of the millennium, was quarried just 10 kilometres from the original, ancient Olympic site at Olympia.

At its highest point the Stadium's arch reaches 14 storeys, and the span from north to south is enough to fit four Boeing 747s side by side. The roof size is equivalent to 115 tennis courts.

Concrete used -	90,000 square metres.
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Structural steel -	12,000 tonnes.
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Reinforcing -	10,000 tonnes.
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Precast seating plates -	55,000 metres.
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Number of piles -	2,600.
Total roof weight -	4,100 tonnes.
Roof size -	30,000 square metres.
Combined main arch span -	295.6 metres.
Roof span at centre -	70 metres.
Biggest single crane lift -	250 tonnes.
Height of stadium -	Front: 43m. Back: 58m.

## **Hosting the Paralympic Games**

Stadium Australia will also host the 2000 Paralympic Games. Over 4,000 athletes from 125 countries will attend the Paralympic Games held 18–29 October 2000.

Facilities for people with disabilities exceed those at any other venue in Australia, and include disabled access to all viewing areas, lifts to all levels and more. Disabled areas are world class. Some 1,000 special seats have also been reserved for people using wheelchairs. These have good sight lines that cannot be blocked by standing spectators.

## **Tours**

Large numbers of people arrive every day to view Stadium Australia - 21 guides have shown as many as 1,600 people a day around the venue.

Patrons come from overseas, all around Australia and Sydney. Many individuals and groups get involved - including politicians, school groups, senior business people, bus groups, conference delegates, and Olympics-related and inbound tourist groups.

## **Facilities and services**

Stadium Australia provides a very high standard of spectator service. Spectators enjoy an unobstructed view of the action from every seat, as well as ease of access to seats, and excellent food and beverage outlets, toilets and stadium entry and exit points.

There are 86 food and beverage outlets, and a kitchen capable of producing 15,000 meals and serving up to 7,000 plated meals at a time. Over 2,400 catering staff work on days involving major events.

## **Corporate facilities and club membership**

Like most major sporting and cultural institutions, Stadium Australia has its own Club, offering two levels of membership. Members enjoy benefits like guaranteed seating at many events and VIP hospitality.

Conference facilities for business meetings, product launches and other events are also available. Fully equipped and catered conference and function rooms can accommodate up to 2,000 delegates.

## **Media**

Information infrastructure is in place to accommodate an in-house media service, including broadcasting and production centres for TV and radio, and a photographer's moat and press centre. Work space has been created for 600 journalists.

## **Beyond 2000**

A great effort has gone into the building of Stadium Australia, resulting in a world-class main venue for the 2000 Olympics. Its outstanding design, superb facilities and exciting atmosphere ensure that the stadium will be an important sporting venue long into the future.

### **Year Book 2000 Cover Picture - Stadium Australia**



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